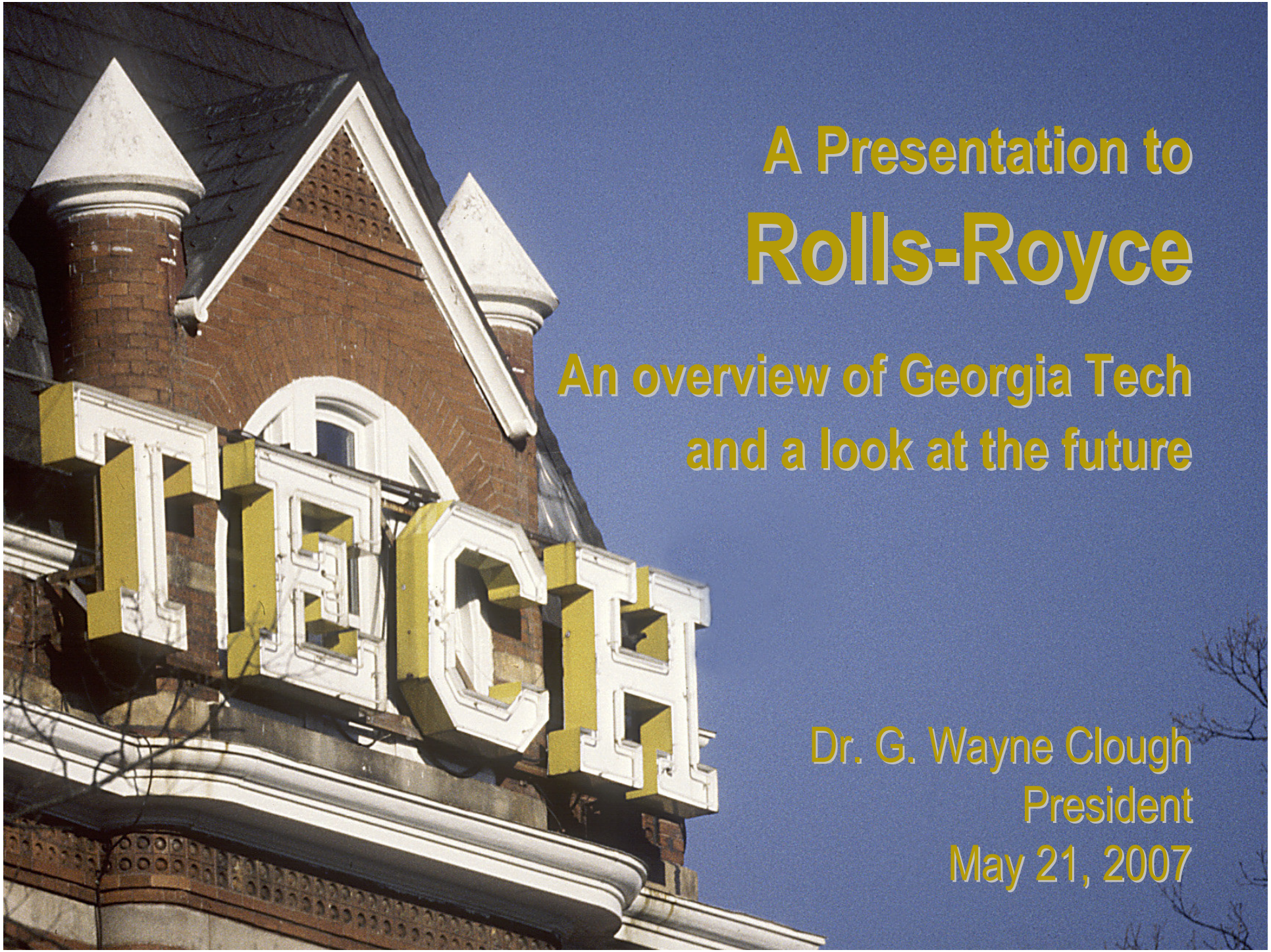


A Presentation to Rolls-Royce

An overview of Georgia Tech and a look at the future

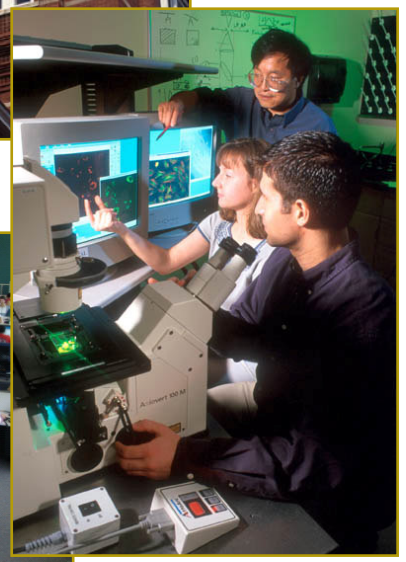
Dr. G. Wayne Clough
President
May 21, 2007

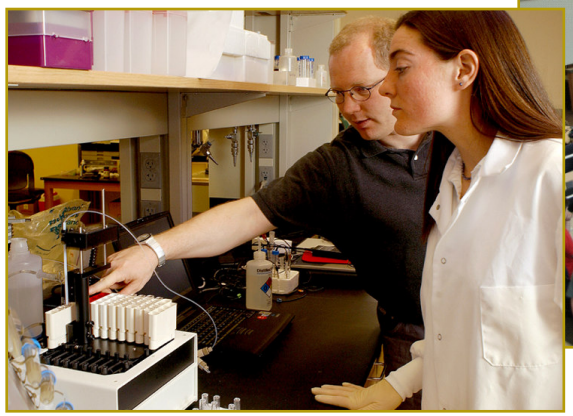
Georgia Tech: Recognized for excellence

- Among top 10 public universities in the United States
- Among top 5 engineering schools in the United States
- Nationally ranked for computing, architecture, management, and selected science and liberal arts programs.
- Caliber of incoming freshmen among nation's top 5 public universities.

Georgia Tech vision and mission

Georgia Tech will define the technological research university of the 21st century and educate the leaders of a technologically driven world.





Achieving the vision

- Excellence and innovation
- Best students, faculty, staff
- Innovative educational programs
- Interdisciplinary environment
- Leading-edge facilities, services
- Industry and community collaboration
- Optimal technology transfer

Five campuses on three continents

Georgia Tech Atlanta

Georgia Tech Lorraine

Georgia Tech Savannah

Georgia Tech Singapore

Georgia Tech Ireland

Students

17,935 students enrolled:

- 12,360 under-graduates
- 5,575 graduate students

- Growing enrollment: added 4,850 students in the past 10 years.

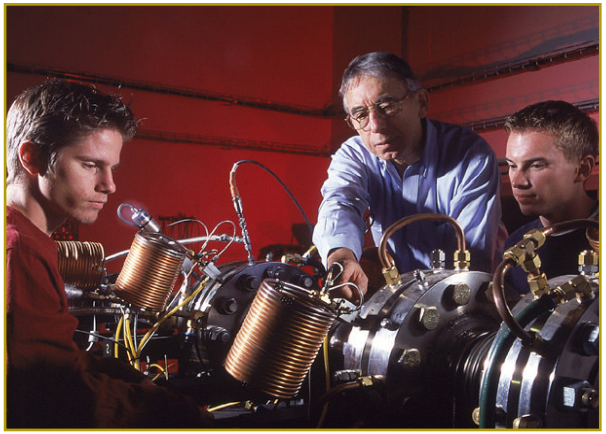
Georgia Tech is a national leader in graduating engineers, including minorities & women.

Faculty

- 954 academic faculty
- 961 research faculty
- 208 post-doctoral fellows
- 125 endowed chairs and professorships
- 28 National Academy members
- 112 NSF CAREER Awards (2nd highest in the nation)
- 7 PECASE Awards (among top 10)

College of Engineering

- Ranked in nation's top 5
- Largest in the nation
- National leader in degrees to women and minorities
- National rankings:
  - Industrial & systems engineering #1
  - Aerospace engineering #5
  - Mechanical engineering #7
  - Electrical & computer engineering #6



Hands-on learning

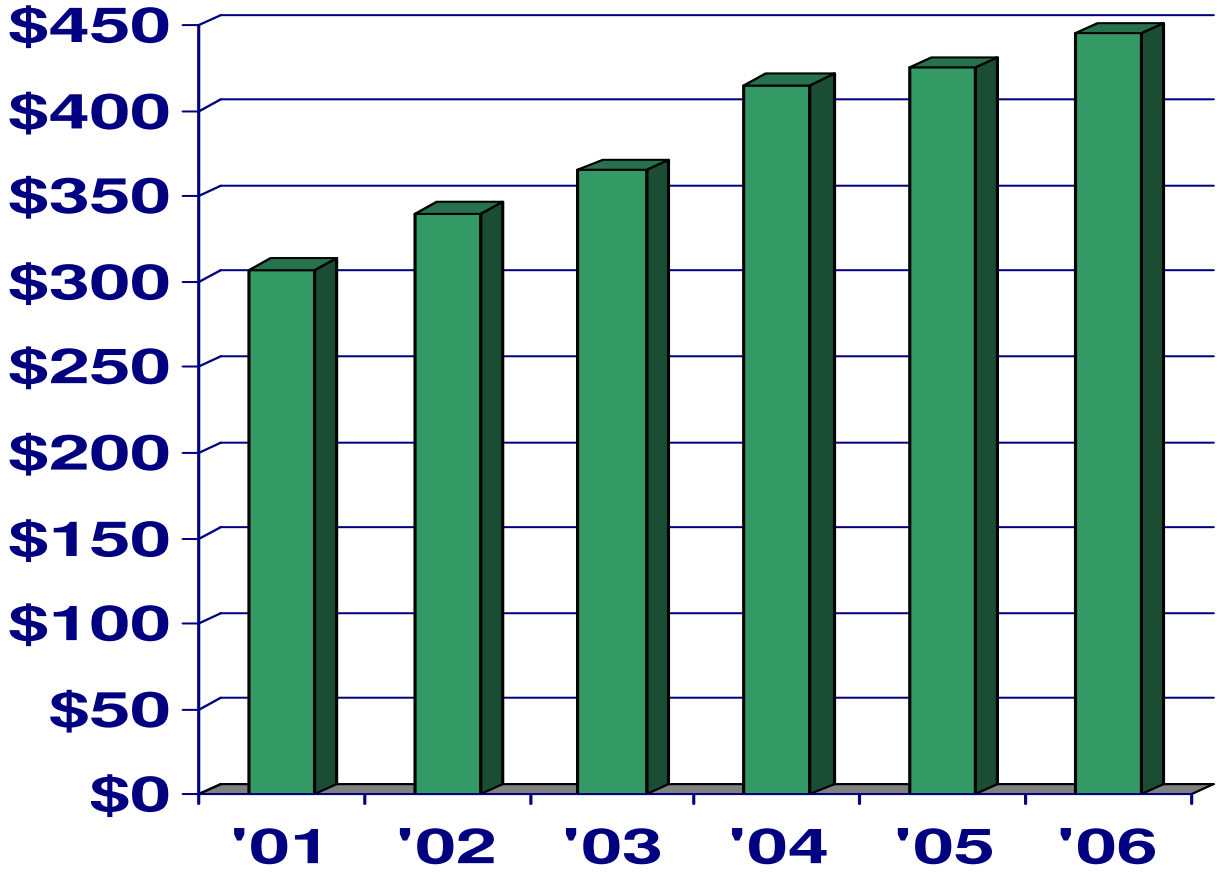
- Nation's largest voluntary co-op program with over 2,700 students
- ¾ of co-op students are engineering majors
- 600 active industry partners
- Internships at home and abroad
- Consistently ranked among *U.S. News'* "Programs to look for"

K-12 outreach

- CEISMC (Center for Education Integrating Science, Mathematics and Computing)
- First Robotics Competitions
- STEP Program

Annual research expenditures

(in millions)

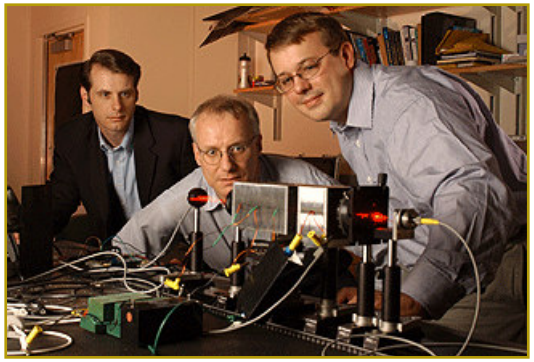


1,884 awards

2,317 awards

Sponsored R&D at Georgia Tech

- Over $50 million in industry R&D
- $102 million in defense R&D
- Classified and unclassified R&D
- Experience with industry IP, import/export regulations (ITAR, EAR), and publications
- R&D operations at international campuses in Europe, Singapore



Partnerships

Other major industry partners include:

- Siemens
- LMCO
- John Deere
- Caterpillar
- Ford
- IBM
- HP
- Microsoft
- Intel
- UTC

Organizational partners include:

- NASA / NIA
- NSF ERCs (including a recent award in fluid power)

Pertinent international partnerships

- Georgia Tech Singapore
  - The Logistics Institute Asia-Pacific
- Georgia Tech – Imperial College partnerships:
  - High performance computing (with Oak Ridge National Laboratory)
  - Engineering of living tissues
  - Biofuels
  - Commercialization (Georgia Tech's Enterprise Innovation Institute with Imperial College's Imperial Innovation

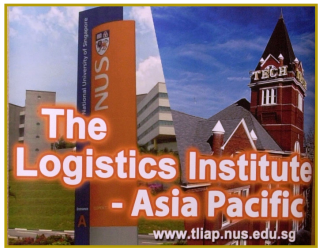
- Rolls-Royce is one of Georgia Tech's top 50 corporate partners
- Over $1 million in R&D since 1994
- Top annual corporate donor to the School of Aerospace Engineering
- 20 named "Rolls-Royce Scholarships" per year in the College of Engineering, focus on diversity

A unique partnership

- Global research and development partnership: Exploratory research, contract research, faculty consulting, shared equipment
- International internship program linking Georgia Tech, Imperial College, Singapore, and Rolls-Royce
- Prominent visibility on campus for recruiting
  - Rolls-Royce Endowed Professor
  - Rolls-Royce Chaired Professor
  - Rolls-Royce Graduate Student Fellowships
  - Rolls-Royce Facility/Lab
  - Rolls-Royce Day @ Georgia Tech
- Strategic Partner Liaison to facilitate access to researchers, facilities, students, education programs
- Financial commitments
  - State/GRA/Georgia Tech - $3,375,000
  - Rolls-Royce - $3,375,000

Established research expertise

- Well-established Georgia Tech R&D activities that are relevant to Rolls-Royce:
  - Aerospace Engineering Combustion Lab
  - Manufacturing Research Center
  - Aerospace Systems Design lab – hosts Cooperative Visualization Environment (CoVE)
  - Supply Chain & Logistics Institute
- Addressing future needs: Marcus Nanotechnology Research Building under construction



Aerospace Engineering Combustion Laboratory

- $8 million facility
- 6 full-time faculty, 10 staff, ~60 students
- Core competencies in intelligent, adaptive propulsion and energy systems; “smart” combustors
- Diagnostics, sensors, actuators
- Governor research awards:
  - NASA URETI Center on aeropropulsion
  - NASA URETI on hypersonics
  - Army MURI on intelligent turbine engines

Manufacturing Research Center

Integrates manufacturing-related interdisciplinary research, including:

- Precision Machining Research Consortium
- Produce & Systems Lifecycle Management Center
- Rapid Prototyping & Manufacturing Institute

Aerospace Systems Design Lab

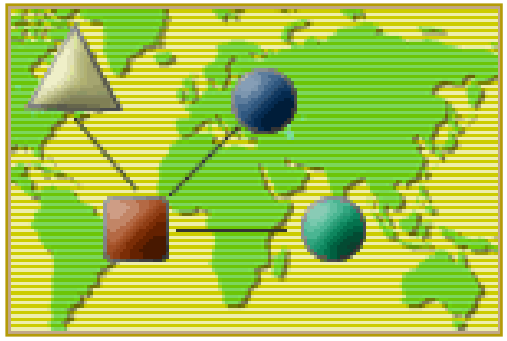
Center provides multidisciplinary environment for research in design engineering and analysis, including:

- Collaborative Visualization Environment (CoVE) – high-resolution display wall for collaborative design and analysis
- Collaborative Design Environment (CoDE)

Supply Chain & Logistics Institute

Center provides research, education, and outreach in global supply chains – strong international component through Georgia Tech Singapore.

- 30 faculty, 20 PhD students
- Among the wolrd's largest academic centers
- 120 MSIE graduates annually
- 30 Logistics Professional Education Certificates annually
- 1,000 participants in short course and conferences



Nanotechnology Research Center

- Marcus Nanotechnology Building under construction: $80 million, 160,000 sq ft
- Georgia Tech research strengths:
  - Nanostructure synthesis and analysis: nano-generators, nanoparticles
  - Nanoscale modeling: atomic-scale behavior
  - Nanocomposites for advanced materials

Georgia Tech and Rolls-Royce already have a strong partnership. We look forward to the opportunity to expand and deepen it.